

**CHICOPEE
CONTRIBUTORY RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2007

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Report Summary:

<u>Highlights</u>	<u>January 1, 2006</u>	<u>January 1, 2007</u>
<u>Contributions</u>		
Funding Schedule FY 2008	\$12,187,397	\$12,187,397
Funding Schedule FY 2009	12,735,835	13,046,583
<u>Funded Ratios</u>		
GAS No. 25	56.7%	58.9%
<u>Participants</u>		
Actives	1,163	1,183
Retirees and Beneficiaries	851	735
Vested	19	0
Inactives	0	89
Disabled	<u>0</u>	<u>96</u>
Total	2,033	2,103
<u>Payroll</u>		
Payroll of Active Members	\$40,556,796	\$43,926,570
Average Payroll	34,873	37,132
<u>Normal Cost</u>		
Employer	2,653,431	2,678,517
Employee	3,364,942	3,593,108
Administrative Expenses	<u>254,630</u>	<u>300,000</u>
Total	6,273,003	6,571,625
<u>Actuarial Accrued Liabilities</u>		
Actives	101,046,037	111,018,568
Retirees, Beneficiaries, Disabilities and Inactives	<u>123,353,958</u>	<u>123,392,587</u>
Total	224,623,915	234,411,155
<u>Actuarial Value of Assets</u>	<u>127,405,049</u>	<u>138,063,455</u>
<u>Unfunded Actuarial Accrued Liabilities</u>	\$97,218,866	\$96,347,700

Introduction

This report presents the findings of an actuarial valuation as of January 1, 2007, of the Chicopee Contributory Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2007.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Chicopee Contributory Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2007.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the last year, the total unfunded actuarial accrued liability decreased by 0.9% to \$96,347,700. The decrease is the result of net favorable actuarial experience during the preceding year.

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	<u>January 1, 2006</u>	<u>January 1, 2007</u>
Superannuation	\$3,978,940	\$4,272,862
Termination	469,965	437,281
Death	430,438	500,196
Disability	1,139,030	1,061,286
Administrative Expenses	<u>254,630</u>	<u>300,000</u>
Total Normal Cost	6,273,003	6,571,625
% of Pay	15.5%	15.0%
Employee Contributions	3,364,942	3,593,108
% of Pay	8.3%	8.2%
Employer Normal Cost	\$2,908,061	\$2,978,517
% of Pay	7.2%	6.8%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits based on the past service of the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	<u>January 1, 2006</u>	<u>January 1, 2007</u>
Actives		
Superannuations	\$88,804,141	\$95,581,328
Termination	2,386,407	1,761,830
Death	2,841,829	4,428,803
Disability	7,013,660	9,246,607
Retirees and Inactives		
Retirees and Beneficiaries	121,503,815	97,685,308
Vested	1,850,143	0
Terminated (Refund)	223,920	890,206
Disabled	<u>0</u>	<u>24,817,073</u>
Total	\$224,623,915	\$234,411,155

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactive participants as well as all benefits earned and expected to be earned in the coming years by the active participants. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	<u>January 1, 2006</u>	<u>January 1, 2007</u>
Actives		
Superannuation	\$161,062,278	\$138,341,920
Termination	0	3,658,507
Death	0	9,172,695
Disability	0	19,351,208
Retirees and Inactives		
Retirees and Beneficiaries	121,503,815	97,685,308
Vested	1,850,143	0
Terminated (Refund)	223,920	890,206
Disabled	<u>0</u>	<u>24,817,073</u>
Total	\$284,640,156	\$293,916,917

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	<u>January 1, 2006</u>	<u>January 1, 2007</u>
Cash equivalents	\$2,229,430	\$1,977,049
Short term investments	6,390,887	7,363,081
Fixed income securities	34,714,857	33,521,010
Equities	62,475,343	66,674,144
International	13,990,127	21,711,577
Real Estate	8,526,075	10,810,428
Venture Capital	0	0
Other	0	0
Accounts receivable	476,561	917,164
Accounts payable	(112,864)	(323,714)
Accrued income	<u>6,474</u>	<u>9,182</u>
Total Market Value	\$128,696,890	\$142,659,921
Total Actuarial Value	\$127,405,049	\$138,063,455

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (8.0%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 10%. The calculation of the actuarial value of assets as of January 1, 2007 is presented in Table V.

Table V

	<u>January 1, 2007</u>
(1) Market value at January, 1, 2006	\$128,696,890
(2) 2006 Contributions	16,102,207
(3) 2006 Benefit payments	(15,510,133)
(4) Net interest adjustment at 8.0% on (1), (2), and (3) to December 31, 2006	<u>10,319,434</u>
(5) Expected market value on January, 1, 2007	\$139,608,398
(1) + (2) + (3) + (4)	
(6) Actual market value on January, 1, 2007	\$142,659,921
(7) 2006 Gain	(3,051,523)
(8) 80% of 2006 gain	(2,441,218)
(9) 2005 Loss	307,478
(10) 60% of 2005 loss	184,487
(11) 2004 Gain	(1,593,639)
(12) 40% of 2004 gain	(637,456)
(13) 2003 Gain	(8,511,393)
(14) 20% of 2003 gain	<u>(1,702,279)</u>
(15) Actuarial value on January, 1, 2007	
(6) + (8) + (10) + (12) + (14) but not less than 90% or more than 110% of (6)	\$138,063,455
(16) Ratio of actuarial value to market value	96.78%
(17) 2006 Market Value Return on Assets	10.4%
(18) 2006 Actuarial Value Return on Assets	7.9%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	<u>January 1, 2006</u>	<u>January 1, 2007</u>
Actuarial Accrued Liability	\$224,623,915	\$234,411,155
Actuarial Assets	<u>127,405,049</u>	<u>138,063,455</u>
Unfunded Actuarial Accrued Liability	\$97,218,866	\$96,347,700
Funded Status	56.7%	58.9%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2021
\$ 94,333,330 over 14 years with 4.25% increasing payments
- Level amortization of the 2002 Early Retirement Incentive by June 30, 2019
\$ 430,453 over 12 years
- Level amortization of the 2003 Early Retirement Incentive by June 30, 2020
\$ 1,583,917 over 13 years
- Interest adjustment for payments contributed monthly over fiscal year.

The pension appropriation is shown in Table VII.

Table VII

	<u>January 1, 2006</u>	<u>January 1, 2007</u>
Normal cost	\$2,908,060	\$2,978,517
Amortization payment of the prior accrued liability	7,600,045	8,392,654
Amortization payment of 2002 ERI liability	52,888	52,888
Amortization payment of 2003 ERI liability	185,556	185,556
Amortization payment of current (gains)/losses	<u>0</u>	<u>0</u>
Total cost	\$10,746,549	\$11,609,615
% of Pay	26.5%	26.4%
Fiscal 2008 cost	\$12,187,397	\$12,187,397
Fiscal 2009 cost	\$12,735,835	\$13,046,583

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be made at the beginning of the year.

The employer total cost is expected to increase during the next 14 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total cost represents 27.7% of payroll, decreasing to 25.8% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 5.0% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast

Fiscal			Employer	Amortization	Employer	Employer	
Year		Employee	Normal Cost	Payments	Total Cost	Total Cost	Funded
Ending	Payroll*	Contribution	with Interest	with Interest	with Interest	% of Payroll	Ratio %**
2008	\$43,926,570	\$3,593,108	\$3,216,798	\$8,970,599	\$12,187,397	27.7	58.7
2009	\$45,903,266	\$3,808,050	\$3,304,042	\$9,742,541	\$13,046,583	28.4	61.1
2010	\$47,968,913	\$4,035,061	\$3,392,623	\$10,145,654	\$13,538,277	28.2	63.6
2011	\$50,127,514	\$4,274,792	\$3,482,486	\$10,565,900	\$14,048,386	28.0	66.2
2012	\$52,383,252	\$4,527,927	\$3,573,567	\$11,004,006	\$14,577,573	27.8	68.9
2013	\$54,740,498	\$4,795,188	\$3,665,793	\$11,460,732	\$15,126,525	27.6	71.7
2014	\$57,203,821	\$5,077,333	\$3,759,083	\$11,936,868	\$15,695,951	27.4	74.6
2015	\$59,777,992	\$5,375,162	\$3,853,345	\$12,433,241	\$16,286,586	27.2	77.6
2016	\$62,468,002	\$5,689,513	\$3,948,479	\$12,950,709	\$16,899,188	27.1	80.6
2017	\$65,279,062	\$6,021,271	\$4,044,372	\$13,490,169	\$17,534,541	26.9	83.6
2018	\$68,216,620	\$6,371,366	\$4,140,900	\$14,052,557	\$18,193,457	26.7	86.8
2019	\$71,286,368	\$6,740,777	\$4,237,925	\$14,638,846	\$18,876,771	26.5	90.0
2020	\$74,494,254	\$7,130,532	\$4,335,298	\$15,192,933	\$19,528,231	26.2	93.3
2021	\$77,846,496	\$7,541,716	\$4,432,852	\$15,629,716	\$20,062,568	25.8	96.6
2022	\$81,349,588	\$7,975,466	\$4,530,407	\$0	\$4,530,407	5.6	100.0
2023	\$85,010,320	\$8,432,982	\$4,627,766	\$0	\$4,627,766	5.4	100.0
2024	\$88,835,784	\$8,915,525	\$4,724,712	\$0	\$4,724,712	5.3	100.0
2025	\$92,833,394	\$9,424,419	\$4,821,013	\$0	\$4,821,013	5.2	100.0
2026	\$97,010,897	\$9,961,060	\$4,916,413	\$0	\$4,916,413	5.1	100.0
2027	\$101,376,387	\$10,526,914	\$5,010,637	\$0	\$5,010,637	4.9	100.0
2028	\$105,938,325	\$11,123,524	\$5,103,385	\$0	\$5,103,385	4.8	100.0
2029	\$110,705,550	\$11,624,083	\$5,333,037	\$0	\$5,333,037	4.8	100.0
2030	\$115,687,299	\$12,147,166	\$5,573,024	\$0	\$5,573,024	4.8	100.0
2031	\$120,893,228	\$12,693,789	\$5,823,810	\$0	\$5,823,810	4.8	100.0
2032	\$126,333,423	\$13,265,009	\$6,085,881	\$0	\$6,085,881	4.8	100.0
2033	\$132,018,427	\$13,861,935	\$6,359,746	\$0	\$6,359,746	4.8	100.0
2034	\$137,959,256	\$14,485,722	\$6,645,934	\$0	\$6,645,934	4.8	100.0
2035	\$144,167,423	\$15,137,579	\$6,945,001	\$0	\$6,945,001	4.8	100.0
2036	\$150,654,957	\$15,818,770	\$7,257,526	\$0	\$7,257,526	4.8	100.0
2037	\$157,434,430	\$16,530,615	\$7,584,115	\$0	\$7,584,115	4.8	100.0
2038	\$164,518,979	\$17,274,493	\$7,925,400	\$0	\$7,925,400	4.8	100.0
2039	\$171,922,333	\$18,051,845	\$8,282,043	\$0	\$8,282,043	4.8	100.0

* Calendar basis

** Beginning of Fiscal Year

GASB Statements No. 25 and No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

Table VIII

	<u>January 1, 2006</u>	<u>January 1, 2007</u>
(1) Actuarial Accrued Liability	\$224,623,915	\$234,411,155
(2) Actuarial Value of Assets	<u>127,405,049</u>	<u>138,063,455</u>
(3) Unfunded Actuarial Accrued Liability	97,218,866	96,347,700
(4) Funded Ratio (2)/(1)	56.7%	58.9%
(5) Covered Payroll	\$40,556,796	\$43,926,570
(6) UAAL as a percentage of payroll: (3)/(5)	239.7%	219.3%
(7) Annual Required Contribution (ARC)	\$11,606,273	\$12,187,397
(8) Net Pension Obligation	\$0	\$0

PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Buck Consultants as of January 1, 2007.

The normal cost for employees on that date was:	\$3,593,108	8.2% of pay
The normal cost for the employer was:	2,678,517	6.1% of pay
The actuarial liability for active members was:		\$111,018,568
The actuarial liability for retired and inactive members was:		123,392,587
Total actuarial accrued liability:		234,411,155
System assets as of that date:		138,063,455
Unfunded actuarial accrued liability:		\$96,347,700
The ratio of system's assets to total actuarial liability was		58.9%

The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.0%
Rate of Salary Increase:	5.0%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets (a)	Actuarial Accrued Liability (b)	Unfunded Actuarial Accrued Liability (b-a)	Funded Ratio (a/b)	Covered Payroll (c)	UAAL as a percent of Covered Payroll (b-a)/c
01/01/07	\$138,063,455	\$234,411,155	\$96,347,700	58.9%	\$43,926,570	219.3%
01/01/06	127,405,049	224,623,915	97,218,866	56.7%	40,556,796	239.7%
01/01/04	118,606,924	202,847,851	84,240,927	58.5%	36,506,298	230.8%
01/01/02	112,638,610	184,479,949	71,841,339	61.1%	36,719,366	195.6%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

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Age/Service Distribution with Salary as of January 1, 2007

Attained Age	Average Salary <5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0
20-24	9	0	0	0	0	0	0	0	0	9
	19,391	0	0	0	0	0	0	0	0	19,391
25-29	38	12	0	0	0	0	0	0	0	50
	26,115	30,908	0	0	0	0	0	0	0	27,265
30-34	36	39	13	0	0	0	0	0	0	88
	29,041	43,475	42,056	0	0	0	0	0	0	37,361
35-39	45	55	37	14	2	0	0	0	0	153
	28,213	41,829	46,257	44,630	36,920	0	0	0	0	39,087
40-44	42	42	39	40	7	0	0	0	0	170
	19,030	33,442	42,988	57,588	39,682	0	0	0	0	38,010
45-49	45	51	39	43	36	3	0	0	0	217
	18,873	28,717	30,052	48,511	54,026	44,275	0	0	0	35,252
50-54	30	42	40	42	28	19	10	0	0	211
	26,992	26,930	26,649	34,668	47,751	60,519	42,081	0	0	34,931
55-59	21	24	32	38	14	13	17	4	0	163
	20,114	27,307	31,429	31,568	37,953	54,140	52,510	39,025	0	34,154
60-64	10	11	16	20	9	11	8	2	1	88
	28,061	30,663	26,823	30,059	28,860	40,259	43,260	65,089	31,725	32,486
65-69	4	4	8	6	6	1	0	0	0	29
	17,400	27,567	28,550	27,849	34,811	40,295	0	0	0	28,432
70+	1	0	2	1	0	0	1	0	0	5
	31,792	0	23,317	57,715	0	0	21,021	0	0	31,432
Total Employees	281	280	226	204	102	47	36	6	1	1,183
Average Salary	24,002	33,822	34,879	41,647	45,427	52,546	46,683	47,713	31,725	35,246

Retiree Distribution as of January 1, 2007

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	1	1	0	5742	5742
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	1	0	1	1340	0	1,340
40-44	0	0	0	0	0	0
45-49	2	3	5	12,453	22,472	34,925
50-54	5	6	11	149,660	131,384	281,044
55-59	36	14	50	1,220,916	134,583	1,355,499
60-64	32	37	69	928,693	314,030	1,242,723
65-69	46	49	95	1,127,795	698,165	1,825,960
70-74	58	44	102	1,263,263	476,136	1,739,400
75-79	62	71	133	1,287,921	715,454	2,003,375
80-84	57	71	128	1,214,848	685,531	1,900,379
85-89	28	57	85	646,017	446,376	1,092,393
90-94	10	33	43	104,533	285,577	390,111
95-99	3	9	12	35,799	72,575	108,374
Total	340	395	735	7,993,239	3,988,027	11,981,266
Average (Age/Payment)	73.2	76.7	75.1	23,510	10,096	16,301
Frequency Percent	46.3	53.7	100	66.7	33.3	100

Disabled Retiree Distribution as of January 1, 2007

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	2	0	2	67,489	0	67,489
40-44	6	0	6	192,872	0	192,872
45-49	4	0	4	119,108	0	119,108
50-54	6	0	6	135,180	0	135,180
55-59	21	2	23	508,087	45,055	553,142
60-64	14	0	14	411,113	0	411,113
65-69	13	0	13	324,487	0	324,487
70-74	7	2	9	181,277	51,117	232,394
75-79	8	0	8	180,198	0	180,198
80-84	7	0	7	137,696	0	137,696
85-89	3	0	3	70,546	0	70,546
90-94	1	0	1	38,010	0	38,010
95-99	0	0	0	0	0	0
Total	92	4	96	2,366,064	96,172	2,462,236
Average (Age/Payment)	63.8	64.9	63.8	25,718	24,043	25,648
Frequency Percent	95.8	4.2	100.0	96.1	3.9	100.0

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2007	\$14,757,713	\$3,593,108	\$12,187,397	\$10,752,481	\$11,775,272
2008	15,091,454	3,808,050	13,046,583	11,335,897	13,099,075
2009	15,502,994	4,035,061	13,538,277	12,370,725	14,441,069
2010	15,950,455	4,274,792	14,048,386	13,511,839	15,884,562
2011	16,443,400	4,527,927	14,577,573	14,767,010	17,429,110
2012	17,092,236	4,795,188	15,126,525	16,140,016	18,969,493
2013	17,741,269	5,077,333	15,695,951	17,636,659	20,668,674
2014	18,510,146	5,375,162	16,286,586	19,264,979	22,416,581
2015	19,397,774	5,689,513	16,899,188	21,028,946	24,219,873
2016	20,309,341	6,021,271	17,534,541	22,936,744	26,183,215
2017	21,386,458	6,371,366	18,193,457	24,995,655	28,174,020
2018	22,562,654	6,740,777	18,876,771	27,210,522	30,265,416
2019	23,760,020	7,130,532	19,528,231	29,592,485	32,491,228
2020	25,003,202	7,541,716	20,062,568	32,151,373	34,752,455
2021	26,256,349	7,975,466	4,530,407	34,886,559	21,136,083
2022	27,541,214	8,432,982	4,627,766	36,536,639	22,056,173
2023	28,845,701	8,915,525	4,724,712	38,260,345	23,054,881
2024	30,128,375	9,424,419	4,821,013	40,065,640	24,182,697
2025	31,343,939	9,961,060	4,916,413	41,964,687	25,498,221
2026	32,608,253	10,526,914	5,010,637	43,968,014	26,897,312
2027	33,838,866	11,123,524	5,103,385	46,085,601	28,473,644
2028	35,022,375	11,624,083	5,333,037	48,321,945	30,256,690
2029	36,033,183	12,147,166	5,573,024	50,707,927	32,394,934
2030	36,944,756	12,693,789	5,823,810	53,269,092	34,841,935
2031	37,741,857	13,265,009	6,085,881	56,030,748	37,639,781
2032	38,529,553	13,861,935	6,359,746	59,016,850	40,708,978
2033	39,137,410	14,485,722	6,645,934	62,255,806	44,250,052
2034	39,558,935	15,137,579	6,945,001	65,785,631	48,309,276
2035	39,783,709	15,818,770	7,257,526	69,648,198	52,940,785
2036	41,118,995	16,530,615	7,584,115	73,838,020	56,833,755

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2007, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees of the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of \$30,000

5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

8. Deferred Vested Retirement**a. Eligibility:**

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability**a. Eligibility:**

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$648.48 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability**a. Eligibility:**

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits**a. Occupational Death:**

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2007.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.0% per annum.

5. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

6. Salary Scale

The assumed annual rates for salary increases including longevity are illustrated by the following rates:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	7.00%	8.00%
1	6.50%	7.50%
2	6.50%	7.00%
3	6.00%	6.50%
4	6.00%	6.00%
5	5.50%	6.00%
6	5.50%	5.50%
7	5.00%	5.50%
8	5.00%	5.25%
9+	4.75%	5.25%

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees' Retirement Administration Commission (PERAC). Actuarial assets equal preliminary asset value plus 25% of the difference between market value and preliminary asset value. Preliminary asset value is the previous years' actuarial asset amount increased by net cash flow and expected investment income. The result must be within 20% of market value.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both pre-retirement and post retirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
20	0.0001	0.0010
30	0.0003	0.0030
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for plan year 2007 is \$300,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. **Actuarial Accrued Liability**

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. **Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. **Actuarial Cost Method**

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. **Actuarial Present Value**

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. **Forecast**

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

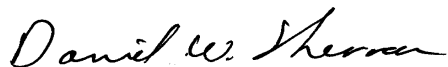
9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Chicopee Retirement System contributing as of January 1, 2007, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost are reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Buck Consultants, LLC



Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 05-4086

November 2007